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ONTARIO
DEPARTMENT OF EDUCATION

MANUAL TRAINING

Household Science and Special Technical Instruction

Approved by
The Department of Education,
August, 1904.

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Accommodations, Equipment and Grants

1. The plans of every building hereafter erected or of any room adapted for the purpose of Manual Training, Household Science, or Special Technical Instruction shall be submitted to the Minister of Education, and be subject to his approval, and a copy of such plans shall be filed in the Department of Education.

2. Subject to the provisions of sections 5, 7 and 8 hereof, every school maintaining a Manual Training department shall be entitled to the following annual grants:—

(*a*) A fixed grant of $350.00.

(*b*) 10 per cent. of the expenditure over $600.00 for teacher's salary or salaries, but so as not in any case to exceed $100.00.

(*c*) 20 per cent. of the cost of equipment for each of the first five years, and thereafter of the annual renewals and additions.

3. Subject to the provisions of sections 5, 7 and 8 hereof, every school maintaining a department for Household Science shall receive annually:—

(*a*) A fixed grant of $200.00.

(*b*) 20 per cent. of the expenditure over $500.00 for teachers' salaries, but so as not to exceed $50.00.

(*c*) 20 per cent. of the cost of equipment for each of the first five years, and thereafter of annual renewals and additions.

4. Any school under the control of a Public, Separate, or High School Board, or Board of Education, or of a recognized Technical School Board, which is specially organized and equipped for giving instruction in the theory and practice of the mechanical and industrial arts and sciences, shall be entitled to receive out of any Legislative appropriation therefor, in addition to such sums as they may be entitled to receive under sections 2 and 3 hereof, such further sum as the Minister of Education may approve, based upon inspection and report, but so as not in any case to exceed $750.00. To be eligible for this grant the building in which instruction is given, equipment, courses of study, and qualification of staff shall be approved by the Minister of Education.

5. In apportioning the Legislative grants on equipments, the maximum value recognized shall be (a) for Manual Training $500.00, (b) for Household Science $300.00, but no grant in respect of equipment shall be paid where such equipment has been donated to the School Board.

6. The course of study, and the qualifications of every teacher hereafter employed, shall be subject to the approval and regulations of the Department of Education.

7. The unit of distribution of the Legislative grant for Manual Training and Household Science shall be the time of one teacher for five hours on each of five days per week.

8. The grants mentioned in the foregoing sections shall be subject to such pro-rata increase or reduction as the Legislative appropriation therefor will permit.

9. No Manual Training or Household Science school or department will be recognized as efficiently equipped that is provided with accommodation for less than 12 or more than 25 students, at any one time, for practical work.

Instructors in Manual Training

1. Subject to the conditions herein mentioned, the Macdonald Institute, Guelph, shall be the only institution recognized by the Department of Education for the training of teachers in Manual Training.

2. The Macdonald Institute shall provide, to the satisfaction of the Department of Education, suitable courses of study as well as adequate accommodation, equipment and instruction for students desiring to become teachers of Manual Training.

3. Any person holding at least a second-class certificate from one of the Normal Schools, who completes satisfactorily a one year's course at the Macdonald Institute, shall be awarded a teacher's certificate in Manual Training.

4. Any graduate of the Normal College, who completes satisfactorily a one year's course at the Macdonald Institute, shall be awarded a teacher's certificate as a Specialist in Manual Training.

5. Any person holding a certificate from the Macdonald Institute as a Teacher of Manual Training shall be qualified to have charge of a department of Manual Training under any High, Public or Separate School Board.

6. No grant shall be paid by the Government towards a department of Manual Training unless the teacher who has charge of such department is duly qualified as herein provided.

7. A certificate as a Teacher of Manual Training or as a Specialist in the same department shall give no qualification to teach any of the other subjects of the Public or High School curriculum.

8. These provisions shall not affect any person who is now in charge of a department of Manual Training in any High, Public or Separate School, or who may be appointed by the Board concerned before the 1st of September, 1904; it being understood that such persons shall have qualifications satisfactory to the Minister of Education.

Instructors in Household Science

1. Subject to the provisions hereinafter mentioned, no certificate to teach Household Science shall be awarded after September 1st, 1904, to anyone who does not hold at least Junior Leaving or Junior Matriculation standing.

2. All institutions whose graduates may be recognized as teachers of Household Science shall provide, to the satisfaction of the Department of Education, suitable courses of study as well as adequate accommodation, equipment and instruction, for students preparing to become teachers in this department.

3. Every student who desires to become a teacher of Household Science must take a two years' course of study in the department, but any person holding, at least, a certificate from one of the Normal Schools, who completes satisfactorily a one year's course, shall be awarded a teacher's certificate in Household Science.

4. Any graduate of the Normal College who completes satisfactorily a one year's course at one of the recognized institutions for the training of teachers in Household Science shall be awarded a teacher's certificate as a Specialist in this department.

5. Any person holding a certificate to teach Household Science granted by the Department of Education shall be qualified to have charge of a department of Household Science under any High, Public or Separate School Board.

6. Certificates as teachers of Household Science shall give no legal qualification to teach any of the other subjects of the school curriculum.

7. No grant shall be paid by the Government towards a department of Household Science unless the teacher who has charge of such department is duly qualified as herein provided.

8. These provisions shall not apply in the case of teachers already in charge of the department of Household Science or to students preparing to be teachers of the subject who have been enrolled before the date of these regulations.

Manual Training

No detailed course of study is prescribed. The following prescription of the character of the work should, however, be followed:—

1. Models.—In drawing up a set of models, exercises, or projects for any school, attention should be given to the following points:—

(1) The course should be suitable to the district and should have special reference to its occupations and industries.

(2) The models should be graduated in order of the difficulty of the tool operations necessary for their completion.

(3) Due provision should be made to allow of the expression of the individual thought of the student.

(4) The work should have a close and intimate relation to the general work of the school.

(5) When formulated, the course should not be regarded as fixed and final; but, from time to time, such changes should be made as greater experience and knowledge may render advisable.

(6) Each exercise should be capable of being performed wholly by the student, and the teacher should never apply a cutting tool to the model on which the boy is actually at work.

(7) The form and proportion of each model should be carefully studied, attention being paid to grace and beauty as well as utility.

(8) The course should be based upon exercises and not upon models. This will lead to variety, and the pupil may make any model he chooses, provided it contains the exercises the teacher wishes him to perform.

2. Working Drawings.— Particular attention should be paid to the preparation of working drawings by the pupil. These should be either full size or on a fairly large scale. Orthographic projections and isometric views should be used, and an exercise should not be commenced unless a fully dimensioned drawing has been made, or is being made concurrently with the bench work. Correctly dimensioned drawings of various objects, of which the students themselves should take the measurements; freehand dimensioned sketches, to be afterwards trans-

lated into working drawings, afford useful practice. Freehand sketching should also be used in making drawings of leaves, tree sections, tools, etc., and in completing curved portions of working drawings. In the more advanced classes, tracings and blue prints should be made.

A course in mechanical drawing should not be entirely restricted to the shop work exercises, as their natural order and sequence will not provide sufficient variety for the range of work necessary to give a grasp of the subject and its application to industrial pursuits. Practice should be given in the reading of drawings until they can be interpreted with accuracy and facility. Work in drawing must be done from the object. Great attention should be paid to lettering and dimensioning. The cultivation of the art of sketching an idea rapidly, to be afterwards worked out, will prove of immense benefit. Each pupil should use a notebook; and the use, care and adjustment of the various instruments should be carefully taught.

3. Materials.—Clear ideas should be acquired respecting the materials used, *e.g.*:—The growth, structure and uses of different varieties of timber; its felling, seasoning, and conversion; warping, twisting, and checking, how caused and how counteracted; the nature and uses of the common iron ores; important iron and steel processes, etc. Various methods of finishing should be shown.

4. Work in Wood and Metal.—The practical work in wood or metal should consist of a series of models or exercises carefully graduated so as to teach the fundamental processes employed in working from the rough material to the finished product. The proper use of nails and screws should be explained and practised, and the various methods of jointing used in constructive work. Models need not be confined to one material; combinations of wood and metal even in the same model often afford useful exercises. While the expression of the individual thought of the pupil may show itself in the formation of useful articles, it is not intended that the Manual Training room be turned into a workshop for the manufacture of school apparatus.

5. Construction and Use of Tools.—The construction and mode of use of the tools employed should be shown, and demonstrations illustrating the proper methods of sharpening and keeping them in good order should be given systematically throughout the course. Pupils should themselves be required to sharpen the edged tools they use, and the proper method of correcting errors in tools of precision, such as winding-strips, square, face-plate, and how to true an oil or grindstone, etc., should also be shown and practised.

6. Lathe Work.—Schools that possess lathes may alternate this work with ordinary bench work, and the products of the lathe should be used in the building up of articles made at the bench. A correct understanding of the accompanying tools, the shape they should take, and the condition they should be in for accomplishing the best work, should be given. The models should be designed with a view to acquainting the pupils with the methods of turning and finishing both hard and soft woods and metals, and the principles involved in face-plate turning and turning between centres. The use of the various lathe attachments and change wheels should be shown, and the different velocities necessary for various purposes clearly explained.

7. Metal Working.—Metal may be worked either hot or cold. Cold metal may take the form of bent iron work, and this may be graduated to suit the physical capacity of the pupils. In its more elementary forms the equipment necessary is simple and inexpensive, and the work

may be made a valuable adjunct to the art teaching given in the school. The course in metal work should give a general knowledge of the working of iron and steel and of the possibilities and limitations of metal working. Work in hot metal demands more extensive equipment. In forging, the preparation of the fire is most important, and instruction should be given as to its building and keeping up. The most important tool in all forge work is the hammer, and much attention should be paid to it. The fundamental operations in forging are few in number and may be taken up in the following order:—Drawing, bending, twisting, shouldering, upsetting, punching, welding, shaping, brazing, and, for decorative work, veining and modelling. Exercises in cold metal may be taken as follows:—Simple filing, soldering, chipping and filing, riveting, scraping, and fitting. Various small tools can be forged and properly tempered for use in the lathe.

8. Decoration.—As a general rule decoration should be applied only to models that are soundly constructed. Various methods of preparing stains and their use for different purposes should be dealt with. Indenting and stamping, groove carving, chip carving, flat carving, low relief and high relief may be employed according to the capacity of the pupil and the requirements of the object to be decorated. All schemes of decoration should first be sketched on paper or worked in clay. To stimulate originality, the unit may be given, and the student encouraged to make new combinations, the copying of designs being as far as possible prevented.

9. System of Measurement.—Either system of measurement may be used, English or Metric; but, as in all scientific work, the latter is coming into general use, it is advisable, in the higher classes, at any rate, at least to combine the systems.

Note 1.—In those cases where the pupils have not taken a course of constructive work in the Public School, the work will of necessity be of a simpler character than much of that suggested in the above scheme. Where possible a separate class should be formed of such pupils.

Note 2.—The graduates of each year should unite in constructing some piece of work to be left in the school as a memorial of the class.

Household Science

First Year.

Hygiene, Sanitation, and Cookery.—Personal hygiene, care of skin, clothing, physical habits, etc.; hygiene of the house, ventilation, location, sanitary surroundings.

Kitchen and its equipments, stoves, etc.; bed-room, bath-room, closets, etc.; household pests; disposal of waste. Food: its functions, classification, special value of each. Cooking: principles involved in the different methods employed, and application of these to different kinds of food.

Continuation of public school course Form IV. in cookery; preparation of meals, cost, time for preparation, planning and serving a meal within a given cost.

Needlework.—All kinds of hand sewing, including buttonholes, patching and darning. Talks on implements used. Study of fabrics.

Growth of cotton and flax. Cultivation of silk worm and processes of manufacture. Demonstration of primitive methods of weaving. Basting and running stitches, back stitch, half-back stitch, combination stitch, overcasting, overhanding on folded selvedge edges, true bias, matching stripes, plain hemming, French hemming, joining bias strips, straightway fell on flannel, herring-bone stitch, gussets, gathers and stitched band, hemmed band, chain and feather stitch, hem stitch, loop stitch, blind loops, buttonhole stitch, sewing on buttons, tapes, hemmed patch, overhand patch, flannel patch, slip stitch, stockinet darning, cashmere darning, mending from home and application of these stitches in making button bags, shoe bags, shoe holders, and in hemming towels, aprons, dressing doll.

Basket and Raffia Work.—Source, kinds and use of wicker and raffia. Making of table mats, napkin rings, dolls' hats, work baskets, porch mats, furniture beaters, etc.

Second Course.

Hygiene, Sanitation and Cookery.—Review and elaboration of principles taught in the first year. Dietetics: preparation of food for invalids, diet for children, for infants, balanced rations. The house: furnishing with consideration of cost, comfort and good taste. Public hygiene: responsibility of the individual in prevention of disease. Home nursing and emergencies: furnishing and care of the sick room, making a bed, changing bed linen, bathing and care of a patient: ventilation of sickroom; treatment of burns, scalds, wounds, fainting, frost-bite, etc.; bandaging; administration of food and medicine; ferments; yeasts, mold, bacteria, etc.

Laboratory Work.—Food combinations, advanced cookery; serving and decoration of food; care of silver, brass, copper, nickel, marble, hardwood. Duties of the hostess in the entertainment of guests. Ethics of the home. Homemaking *versus* housekeeping, the home as a community. Relation of the home to the state. Influence of a well-ordered home.

Needle Work.—Talks on materials suitable for underwear. Embroideries, laces, and other trimmings. Instruction in the use of patterns. Cutting, fitting, and making corset cover with French fell. Taking measurements and drafting pattern for drawers. Cutting out drawers. Making tucks and preparing the trimming. Putting tucks and insertion together. Gathering, stroking and putting on ruffles. Making French seams and placing placket gusset. Putting on yoke or band. Making button holes. Drafting pattern for skirt. Taking measurements, cutting, fitting and making night gown.

Threading, running, oiling, and cleaning of sewing machines. Use of attachments.

Application of sewing stitches in outlining, and Kensington stitch on doily or tray cover. Embroidering initials. Hemstitching. Fringing doily.

Note.—The course in Household Science is a two years' one; but, when the conditions render it desirable, it may be extended over a longer period.